PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P043797PCT HBO/jdo	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/NL2004/000510	International filing date *(day/month/year)* 14.07.2004	Priority date *(day/month/year)* 14.07.2003

International Patent Classification (IPC) or national classification and IPC
C08K3/26, C08K5/13, C08K5/524, C08K5/42

Applicant
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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 2 sheets, as follows:
      ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the opinion
   - ☐ Box No. II Priority
   - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☐ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☒ Box No. VII Certain defects in the international application
   - ☒ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
13.05.2005	03.08.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Bergmans, K Telephone No. +31 70 340-4189

Form PCT/IPEA/409 (Cover Sheet) (January 2004)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. PCT/NL2004/000510

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-25	as originally filed
Claims, Numbers	
16, 17	as originally filed
1-15	received on 13.05.2005 with letter of 13.05.2005

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/NL2004/000510

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-5
	No:	Claims	6-15
Inventive step (IS)	Yes:	Claims	1-5
	No:	Claims	6-15
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SEPARATE SHEET)

International application No.
PCT/NL2004/000510

Re Item I
Basis of the report

All amendments are allowable under article 19(2)PCT

Re Item V
Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Novelty (Art. 33(2) PCT)

The document D1 (WO9948997) discloses a composition comprising a polyisobutylene (page 23) and a mixture of organic materials for stabilisation of the composition. The mixture comprises a sterically hindered phenol anti-oxidant and an other anti-oxidant like lactone or phosphite anti-oxidants. Optionally further additives may be added to the composition (pages 38 and 43). The composition is used in films, tapes, binders for surfaces and moulding compounds (page 44) and provide the article with anti-corrosive properties. Since mosaics are not allowed in assessing novelty the subject matter of the present application is novel.

The document D2 (EP1086963) discloses a molded product (e.g. industrial stretch wrapping film/ tapes) comprising an ethylene copolymer optionally with a liquid polyisobutylene (page 32 par 287), and a anti-oxidant composition (page 55 par 514). The film/tape can be laminated to other polyolefin layers forming a laminate or multi-layer film/tape. The subject-mater of claims 6-15 is considered to be not novel (Art. 33(2) PCT.

In view of the prior art cited, claims 1-5 appear to be novel and meet therefore the requirements of Art. 33(2) PCT.

Inventive step (Art. 33(3) PCT)

The document D1 is considered as the closest prior art and discloses a composition comprising an organic material (A) e.g. polyisobutylene and a mixture (compound (B) and (C)) of organic materials for stabilisation of the organic material (composition).

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The mixture comprises a sterically hindered phenol anti-oxidant and an other anti-oxidant like lactone or phosphite anti-oxidants. Optionally further additives may be added to the composition. The composition is used in films, tapes, binders for surfaces and moulding compounds and provide the article with anti-corrosive properties.

The subject-matter of present claims 1-5 differs from this prior art in the selection of polyisobutylene characterised by a Tg of less than -20 °C and a surface tension less than 40 nM/m and anti-oxidant composition comprising a sterically hindered phenol and a secondary anti-oxidant.

The examples disclosed in the present application show that the use of the disclosed anti-oxidant composition is characterised by a slower migration (out of the tape) of the anti-oxidant components and consequently the wrap tapes show an improved adhesive strength (improved anti-corrosion characteristic).

The problem to be solved by the present invention could be defined as a wrapping tape characterised by better adhesive strength consequently improved anti-corrosion characteristic.

Although the document D1 discloses that the mixture of compounds (B) and © is characterised by anti-corrosion property and that the mixture can be used in polyisobutylene polymers which are applicable in tape applications, there is no indication in the document D1 of slower migration of the components used in the anti-oxidant composition nor is there an disclosure of wrap tapes for protecting shaped articles.

Therefore, the solution as proposed in the present application is considered as involving an inventive step (Art. 33(3) PCT).

Re Item VII

Certain defects in the international application

1. To meet the requirements of Rule 5.1(a) (ii) PCT, documents D1 and D5 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

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2. The specification for an international application should be capable of being understood without reference to any other document (cf PCT Guidelines Ch. II 4.17). The expression "hereby incorporated by reference" found in the description are therefore not according to the PCT requirements.

Re Item VIII
Certain observations on the international application

Clarity (Art. 6 PCT)

1. The attention to the applicant is drawn to the fact that if the application when amended contains an unnecessary plurality of independent claims, no further examination of any of the claims will be carried out.

2. The present application does not meet the requirements of Article 6 PCT.
The applicant is invited to file a retyped version of the description (page 5,18,21 and 24).

3. Claim 8 does not meet the requirements of Article 6 PCT in that matter for which protection is sought is not clearly defined. The claim attempts to define a "product by process". Claims for products defined in terms of a process are admissible only if the products as such fulfill the requirements for patentability and if they cannot be defined otherwise.

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Claims (amended)

1. Use of a composition comprising:
   (a) a polyisobutene having a glass transition temperature of less than -20°C and surface tension of less than 40 mM/m at a temperature above the glass transition temperature of said polyisobutene,
   (b) a filler material, and
   (c) an anti-oxidant composition, wherein said anti-oxidant composition comprises a primary and a secondary anti-oxidant, the primary anti-oxidant being selected from the group consisting of sterically hindered phenol compounds, provided that the sterically hindered phenol compound is not 2,6-di-t-butyl-4-methylphenol, .

   for the protection of a shaped article against corrosion.
2. Use according to claim 1, wherein the sterically hindered phenol compound comprises at least two sterically hindered phenol groups.
3. Use according to claims 1 or claim 2, wherein the secondary anti-oxidant is selected from the group consisting of fosfites and thioesters.
4. Use according to any one of claims 1 – 3, wherein the anti-oxidant composition further comprises a lactone.
5. Use according to any one of the preceding claims, wherein the shaped article is an oil or gas line or pipe.
6. Wrapping tape for the protection of a shaped article against corrosion, wherein the wrapping tape comprises:
   (a) a first layer comprising a film, said film comprising a polymer or a copolymer of one or more α-olefins and/or diolefins, and
   (b) a second layer comprising the composition according to any one of claims 1 – 5.
7. Process for the manufacturing of a wrapping tape according to claim 6, wherein a composition according to any one of claims 1 – 5 is laminated onto a film, said film comprising a polymer or a copolymer of one or more α-olefins and/or diolefins.

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8. A shaped article comprising the composition according to any one of claims 1 –5 or comprising the wrapping tape according to claim 6 or comprising the wrapping tape obtainable by the process according to claim 7.

9. Shaped article according to claim 9, wherein the shaped article is an oil or gas line or pipe.

10. Process for covering a shaped article with a wrapping tape, wherein the wrapping tape comprises:
   (a) a first layer comprising a film, said film comprising a polymer or a copolymer of one or more α-olefins and/or diolefins, and
   (b) a second layer comprising the composition according to any one of claims 1 – 5.

11. Process according to claim 10, wherein the surface of the shaped article is cleaned to a St-2 level according to NEN-EN-ISO Standard 8501-1 prior to the application of the wrapping tape.

12. Process according to claim 10 or claim 11, wherein the wrapping tape is wrapped around the shaped article such that subsequent layers of the wrapping tape overlap each other.

13. Process according to any one of claims 10 - 12, wherein after the wrapping tape has been applied, an outerwrap film is wrapped around the shaped article.

14. Process according to claim 13, wherein the outerwrap film is selected from films comprising one or more polyolefins.

15. Process according to claim 14, wherein the polyolefin is selected from the group consisting of ethylene homopolymers, ethylene copolymers, ethylene vinylchloride copolymers, ethylene vinylacetate copolymers.

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